STATEMENT OF BASIS

HEAVY EQUIPMENT SHOP
SOLID WASTE MANAGEMENT UNIT NO. 49
45TH SPACE WING
CAPE CANAVERAL AIR FORCE STATION
BREVARD COUNTY, FLORIDA

PURPOSE OF STATEMENT OF BASIS

This Statement of Basis (SB) has been developed in order to inform the public and give the public an opportunity to comment on a proposed remedy to clean up contamination at the Heavy Equipment Shop (HES). A 45th Space Wing (45th SW) installation restoration partnering (IRP) team consisting of United States Air Force (USAF), United States Environmental Protection Agency (USEPA), the State of Florida Department of Environmental Protection (FDEP), the U. S. Army Corps of Engineers, and various environmental consultants have determined that the proposed remedy is cost effective and protective of human health and the environment. However, prior to implementation of the proposed remedy, the 45th SW IRP team would like to give an opportunity for the public to comment on the proposed remedy. At any time during the public comment period, the public may comment as described in the "How Do You Participate" section of the SB. Upon closure of the public comment period, the 45th SW IRP team will evaluate all comments and issues raised in the comments and determine if there is a need to modify the proposed remedy prior to implementation.

Brief Site Description

The Heavy Equipment Shop (See Figure 1) is located in CCAFS Industrial Area and has been in operation since the 1950's. It has served as a maintenance facility for various types of heavy equipment.

WHY IS CLEANUP NEEDED?

The results of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) indicated that two polynuclear aromatic hydrocarbons (PAHs) and a pesticide (listed in Table 1) are present in the surface soils at levels that could be potentially harmful to hypothetical future residents and future site workers.

HOW DO YOU PARTICIPATE?

The 45th SW IRP team solicits public review and comment on this SB prior to implementation of the proposed remedy as a final remedy. The final remedy for HES will eventually be incorporated into the Hazardous and Solid Waste Amendments (HSWA) Permit for Cape Canaveral Air Force Station (CCAFS).

The Clean-up Remedy

The proposed clean-up remedy for the HES includes (but is not limited to) the following components:

- Implementation of land use controls designed to prevent exposure to site contaminants. These include:
  - Prohibition of residential development
  - Protection of site workers
  - Quarterly monitoring requirements
  - Posting warning signs on-site

A complete list of land use controls and other protective measures are found in the HES Land Use Control Implementation Plan (LUCIP)

The public comment period for this SB and the proposed remedy will begin on the date that a notice of the SB's availability is published in a major local newspaper of general circulation. The public comment period will end 45 days thereafter. If requested during the comment period, the 45th SW IRP team will hold a public meeting to respond to any oral comments or

In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for CCAFS Heavy Equipment Shop. For detailed information, consult the Heavy Equipment Shop RFI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-suppport.org/45SW_IRP_EA.

questions regarding the proposed remedy. To request a hearing or provide comments, contact the following person in writing within the 45-day comment period:

Mr. Jorge Caspary
FDEP-Bureau of Waste Cleanup
2600 Blair Stone Road, MS-4535
Tallahassee, FL 32399-2400
E-mail: Jorge.Caspary@dep.state.fl.us
Telephone: (850) 921-9986

The HSWA Permit , the SB, and the associated Administrative Record, including the RFI Report, will be available to the public for viewing and copying at:

Environmental Management, CEV/ESC
Facility 1638, Samuel Phillips Parkway
Cape Canaveral Air Force Station, FL
For public access call (321) 853-0965

This information can also be found on-line at http://www.mission-support.org/45SW_IRP_EA

The HSWA Permit, the SB, and HES Report summaries will be available for viewing and copying at:

Central Brevard Library
308 Forrest Avenue
Cocoa, Fl, 32922

To request further information, you may contact one of the following people:

Ms. Teresa Green
Environmental Restoration Element Chief
45 CES/CEVR
1224 Jupiter Street
Patrick Air Force Base, FL 32925-3343
E-mail: teresa.green@patrick.af.mil
Telephone: (321) 853-0965

Mr. Jorge Caspary
See previous contact information

Mr. Timothy R. Woolheater, P. E.
EPA Federal Facilities Branch
Waste Management Division
Sam Nunn Atlanta Federal Center
61 Forsyth Street
Atlanta, GA 30303-8960
E-mail: woolheater.tim@epamail.epa.gov
Telephone: (404) 562-8510

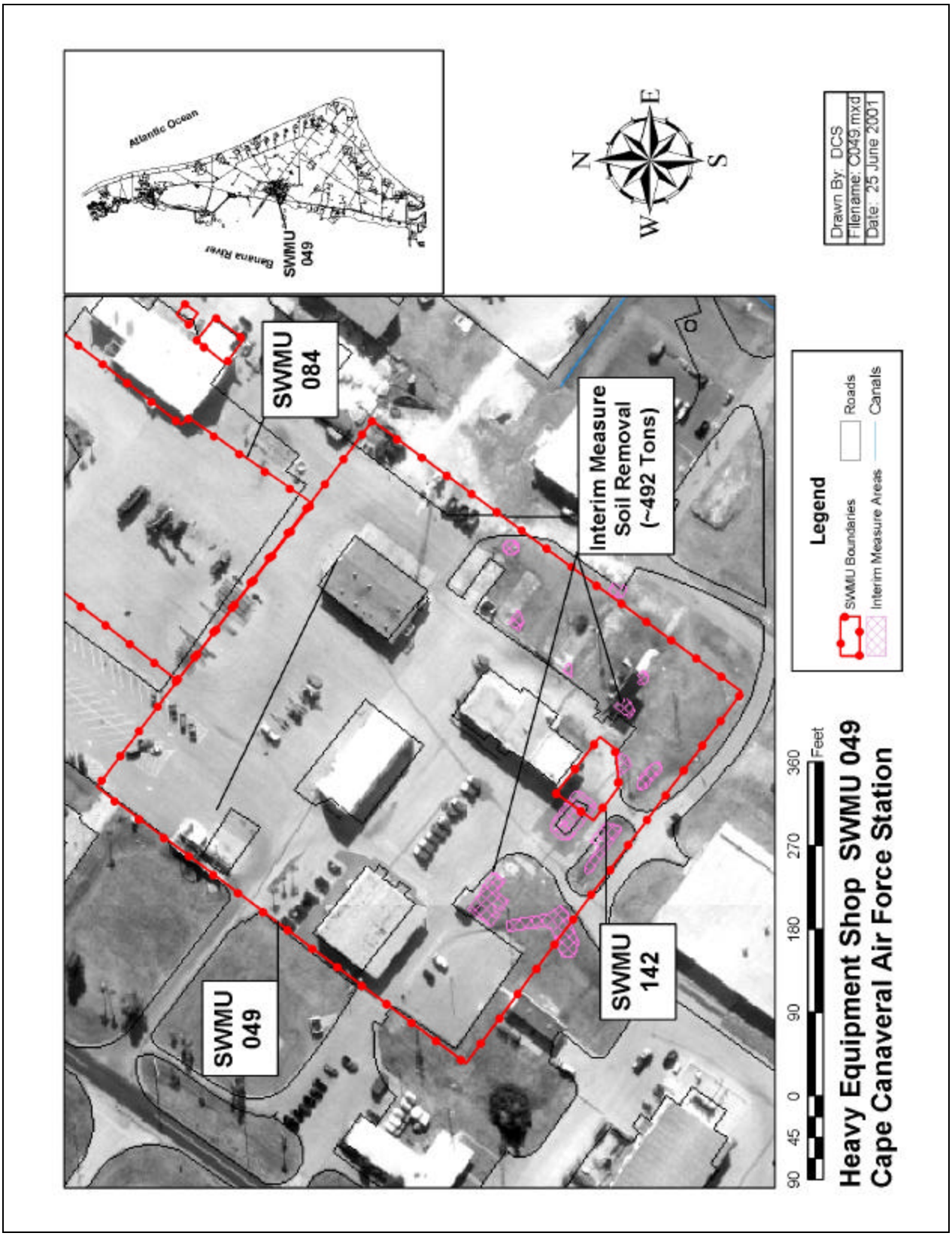
FACILITY DESCRIPTION

USAF established the 45th SW as the primary organization for the Department of Defense aerospace force programs. Historically, the National Aeronautics and Space Administration (NASA) also performed space launch related operations on the 45th SW property. These operations have involved the use of toxic and hazardous materials. Under RCRA and the HSWA Permit (CCAFS Permit No. FL2800016121) issued by the USEPA, the 45th SW was required to perform an investigation to determine the nature and extent of contamination from Solid Waste Management Unit (SWMU) No. 49, Heavy Equipment Shop.

SITE DESCRIPTION AND HISTORY

The HES (Facility 49835) is located in the Industrial Area on CCAFS (See Figure 1) and has been in operation since the 1950s. The site has served as a maintenance facility for large equipment such as trucks, cranes, compressors, and golf carts for over 30 years. The facility includes auto maintenance shops, a vehicle wash facility, a vehicle paint shop, material and fuel storage areas, drum storage areas, and a sling test facility. According to Pan Am/ Johnson Controls personnel, a repair shop for air conditioning units and generators was previously operated at the site before moving to the current Generator Shop (Facility 44625). The site has also functioned as an electrical and plumbing shop. The HES currently consists of one concrete block building surrounded by asphalt pavement.

The HES was initially identified as an area of environmental concern and has been addressed through the RCRA investigation process, as



In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for CCAFS Heavy Equipment Shop. For detailed information, consult the Heavy Equipment Shop RFI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-suppport.org/45SW_IRP_EA.

documented in this SB. However, it should be noted that petroleum contamination was detected at Facility 1628, located within the HES investigation area, and was addressed under the State Petroleum Program. State Petroleum Program investigations are regulated by FDEP. They were conducted separately from, but in parallel with, the RCRA investigations documented in this SB. It should be noted that all petroleum issues were successfully addressed and the impacted areas are now considered "no further action" under the State Petroleum Program.

Based on the history of the facility, the USAF initiated IRP activities from 1990 through present. The USAF conducted the following investigations:

- 1991-1993: A Preliminary Assessment including records search, site reconnaissance, and interviews with knowledgeable aerospace personnel was conducted. The Preliminary Assessment Report recommended that a Site Investigation (SI) be conducted to further determine the extent of contamination at ten areas of concern.
- 1993-1994: An SI was conducted at the site to further determine the extent of contamination in soil and groundwater. The SI Report concluded that the presence of constituents in soils and groundwater might pose a risk to human health and the environment. The SI Report recommended that a RCRA Facility Investigation (RFI) be conducted to assess the nature and extent of the contamination present at the site, and perform risk assessments to determine if the contamination is detrimental to human or ecological health.
- 1997-1999: An Interim Measure was performed in order to remove soils that were contaminated with pesticides and metals. The clean-up action resulted in the removal of approximately 351 cubic yards (492 tons) of contaminated soils.
- 1995-1999: An RFI was performed, detailing the sampling and analysis of site soil and groundwater. These results were used to determine human health risk. The Human Health Risk Assessment (HHRA) for human health indicated that potential risk exists from the site soil and groundwater, however the groundwater issues were petroleum-related and were deferred to the State Petroleum Program. Long Term Monitoring was implemented under the State Petroleum Program, and by August 2000, all groundwater contaminants were below screening criteria and FDEP approved a recommendation of "No Further Action" for groundwater. Due to lack of suitable habitat, an ecological risk assessment was not performed

SUMMARY OF SITE RISK

As part of the RFI activities, an HHRA was conducted to estimate the health risks associated with the site-specific contamination. The risk assessment was performed in accordance with risk management decision processes established by the USEPA, FDEP, and the USAF at the time the RFI was initiated. Following a habitat evaluation, it was determined that no suitable ecological habitat exists at the HES. Based on this evaluation, an ecological risk assessment was not conducted

The Chemicals of Concern (COCs) identified for human health during the RFI were:

- Soil: benzo(a)pyrene, dibenz(a,h) anthracene, and dieldrin
- Groundwater: arsenic, benzene, pentachlorophenol, 1,2-dicloropropane

Surface water and sediment features were not present on the site, and were therefore not evaluated as a source of potential human health risk. A soil removal was performed based on initial RFI data. The goal of this removal was to reduce potential human health risk.

Remaining soils pose a potential unacceptable risk under the hypothetical future adult resident, hypothetical future child resident, current industrial worker, and future industrial worker scenarios. Soil exposure exceeded the one in one million (1/1,000,000) cancer threshold for all these potential receptors. The major contributors to risk were benzo(a)pyrene, dibenz(a,h)anthracene, and dieldrin.

Groundwater exceeded the one in one million (1/1,000,000) cancer threshold and the noncarcinogenic hazard index target of 1.0 for the hypothetical future adult resident and the hypothetical future child resident. For the future industrial worker and the future construction worker, only the one in one million (1/1,000,000) cancer risk threshold was exceeded. Arsenic, benzene, and pentachlorophenol were the primary contributors to cancer risk, while arsenic was the most significant component of noncarcinogenic hazard. Two of the groundwater COCs (arsenic and 1,2-dichloropropane) were eliminated from the risk assessment because concentrations found at HES did not exceed Maximum Contaminant Levels (MCLs) established by EPA. The other two COCs (benzene and pentaclorophenol) were included in an FDEP State Petroleum Program long term monitoring plan for the Site, since all MCL exceedances for these compounds were in the vicinity of a former UST location being regulated by FDEP. After five quarters of monitoring, all parameters had been below MCLs for three consecutive quarters, so FDEP approved discontinuation of the monitoring program. Therefore, unacceptable human health risk from groundwater has been mitigated by natural attenuation in the timeframe since the RFI was completed.

WHAT ARE THE CLEANUP OBJECTIVES AND LEVELS?

The remedial action objectives (RAOs) are to:

1) Protect humans from exposure to soils by preventing residential land use where site contaminant concentrations are higher than regulatory standards, and
2) Ensure that workers are adequately protected when performing tasks that may result in exposure to site soils.

Table 1 lists the COCs present at the HES site. The first column lists the chemical name, the second column the maximum concentration detected in the impacted media at HES during the RFI, and the last column presents the clean-up level to be achieved at the site. Please note that groundwater COCs identified in the risk assessment are not addressed in Table 1 or by the remedy defined in this SB. As discussed under "Summary of Site Risk", groundwater COCs were addressed separately under the FDEP Petroleum Program, and have been successfully remediated.

TABLE 1—CLEANUP GOALS

Site-Related Chemicals of Concern (COCs)	Maximum Detected Concentration (mg/kg)	Site-Specific Clean-up Level[1] (mg/kg)
SOIL		
Benzo(a)pyrene	0.34	0.01
Dibenz(ah)anthracene	0.17	0.088
Dieldrin	0.12	0.04

[1] Clean-up level represents the most stringent value among USEPA and FDEP criteria at the time of the final investigation.

CLEANUP ALTERNATIVES FOR HES

Clean-up alternatives are different combinations of plans to restrict site use and to contain, remove and/or treat contamination in order to protect public health and the environment. Only two alternatives were considered because of low levels of contamination present at the HES. The clean-up alternatives considered for the HES are summarized below.

No Action: Evaluation of the No-Action alternative is used as a basis for comparison with other alternatives. Under this alternative, no remedial action would be taken to reduce human health risks or restrict site use. It was determined this alternative would not attain the RAO.

Land Use Controls: Under this alternative, the base would implement site-specific land use controls to protect against exposure of hypothetical future residents and future site workers to contaminated soils. The 45th SW, USEPA, and FDEP have entered into a Memorandum of Agreement (MOA), which outlines how land use controls will be managed at the 45th SW. The MOA requires periodic inspections, warning signs, condition certification, construction project coordination, and agency notification. Site-specific details can be found in the Heavy Equipment Shop Land Use Control Implementation Plan (LUCIP).

EVALUATION OF REMEDY ALTERNATIVES

Each cleanup alternative was evaluated to determine how each potential remedy would comply with the four general standards for corrective measures. The four general standards for corrective measures are:

- Overall protection of human health and the environment;
- Attain media cleanup standards;
- Control the sources of releases; and
- Comply with standards for management of wastes

The second alternative (Land Use Controls) meets each of the above criteria, while the no action alternative remedy would not meet them.

LAND USE CONTROLS AGREEMENT

By separate MOA dated 23 December 1999, with USEPA and FDEP, CCAFS, on behalf of the Department of the Air Force, agreed to implement base-wide, certain periodic site inspection, condition certification, and agency notification procedures designed to ensure the maintenance by installation personnel of any site-specific land use controls deemed necessary for future protection of human health and the environment. A fundamental premise underlying execution of that agreement was that through the USAF's substantial good-faith compliance with the procedures called for therein, reasonable assurances would be provided to the USEPA and FDEP as to the permanency of those remedies which included the use specific land use controls.

Although the terms and conditions of the MOA are not specifically incorporated or made enforceable herein by reference, it is understood and agreed by the USAF, USEPA, and FDEP that the contemplated permanence of the remedy reflected herein shall be dependent on CCAFS's substantial good-faith compliance with the specific land use control maintenance commitments reflected therein. Should such compliance not occur or should the MOA be terminated, it is understood that the protectiveness of the remedy concurred in may be reconsidered and that additional measures may need to be taken to adequately ensure necessary future protection of human health and the environment.

WHAT IMPACTS WOULD THE CLEANUP HAVE ON THE LOCAL COMMUNITY?

There would be no impacts to the local community because residential use of the HES is not occurring nor is it expected in the near future. As long as CCAFS remains an active gateway for the aerospace industry, the HES is expected to continue operating in an industrial capacity.

Although remaining soil concentrations do not exceed FDEP Industrial Soil Cleanup Target Levels, the human health risk assessment indicated a low-level potential risk to future site workers. Based on this potential risk, land use controls will be put in place to ensure that workers are adequately protected when engaging in activities that require contact with soil.

WHY DOES THE 45th SW IRP TEAM RECOMMEND THIS REMEDY?

The 45th IRP team recommends the proposed remedy because it will provide sufficient and cost effective safeguards for residential exposures scenarios. Although all remaining soil contaminant concentrations are below the FDEP Industrial Soil Cleanup Target Levels, controls are needed to mitigate the low-level risk to site workers that was calculated during the human health risk assessment. In order to be conservative and ensure that workers are adequately protected, the remedy also provides controls that will regulate worker exposure and ensure that protective equipment is employed, when warranted. Additionally, the area will remained industrialized and the potential exposure of ecological receptors will thereby be minimized. The proposed remedy meets the four general standards for corrective measures.

NEXT STEPS

The 45th SW IRP team will review all comments on this SB to determine if the proposed remedy needs modification prior to implementation and prior to incorporating the proposed remedy into the CCAFS HSWA permit. If the proposed remedy is determined to be appropriate for implementation, then the land use controls will be initiated and a LUCIP will be developed and incorporated into the MOA.

In accordance with RCRA Section 7004(b), this Statement of Basis summarizes the proposed remedy for CCAFS Heavy Equipment Shop. For detailed information, consult the Heavy Equipment Shop RFI Report which is available for review at the 45th SW Environmental Management Office (See "How Do You Participate") or on-line at http://www.mission-suppport.org/45SW_IRP_EA.

LAND USE CONTROL IMPLEMENTATION PLAN

HEAVY EQUIPMENT SHOP, FACILITY 49835
SOLID WASTE MANAGEMENT UNIT 49 (SWMU NO. 49)
45TH SPACE WING
CAPE CANAVERAL AIR FORCE STATION
BREVARD COUNTY, FLORIDA

Facility Description

The Heavy Equipment Shop (HES), Solid Waste Management Unit 49 (SWMU No. 49), has been in operation since the 1950's. The site has served as a maintenance facility for large equipment such as trucks, cranes, compressors, and golf carts for over 30 years. The facility includes auto maintenance shops, vehicle wash facility, vehicle paint shop, material and fuel storage areas, drum storage areas, and a sling test facility. According to Pan Am/Johnson Controls personnel, a repair shop for air conditioning units and generators was previously operated at the site before moving to the current Generator Shop (Facility 44625). The site has also functioned as an electrical and plumbing shop. HES currently consists of one concrete block building surrounded by asphalt pavement.

Location (Reference Site Map on last page of this document)

Site Plan Coordinate	Northing	Easting
North	1511364.19	791962.12
West	1510964.33	791664.56
South	1510665.59	792064.82
East	1511065.51	792357.06

Objective

Implementation of site-specific land use controls to prevent exposure of hypothetical future residents to the soil.

Land Use Controls (LUCs) to be Implemented:

Administrative:

- The property will be prohibited from residential or other non-industrial development without prior written notification to the Florida Department of Environmental Protection (FDEP) and the United States Environmental Protection Agency (USEPA) concerning the SWMU land use change. Dependent on site conditions and the nature and intensity of the proposed land use change, additional site investigations and assessments could be required for the United States Air Force (USAF). Based on

these analyses, additional remedial measures may be required prior to land use change.

- Perform and document baseline LUC audit upon finalization of the Statement of Basis.
- Perform and document quarterly LUC compliance inspections in accordance with 45th SW LUC Operations Manual.
- Perform, document, and report an annual audit on LUC implementation, maintenance, and compliance in accordance with the 45th SW LUC Operations Manual and the current CCAFS Corrective Action Management Plan (CAMP).
- The property Land Use Control Implementation Plan (LUCIP) shall remain in effect until:
  a) Changes to applicable Federal and State risk-based clean-up standards occur which indicate site contaminants no longer pose potential residential risk; or
  b) Reduction in site contaminant concentrations to below Federal and State residential risk-based clean-up standards occurs.
- In the event of property realignment, transfer, or re-use for non-industrial or non-commercial purposes, assessment and remediation may be necessary to ensure that impacts to ecological receptors are not increased or to mitigate potential ecological impacts where residual contamination exists.

Soil:

- Soils will not be disturbed or moved during property development, maintenance or construction, without:
  a) USAF review, coordination, and approval of the proposed construction/ development plans via AF Form 103 (Base Civil Engineer Work Clearance Request), 332 (Base Civil Engineer Work Request), 813 (Request for Environmental Impact Analysis), or similar process;
  b) Ensuring proper engineering controls are in-place so that unauthorized release or disposal of the affected media does not occur. This includes conducting appropriate testing and developing a disposal plan in accordance with the LUC Operations Manual prior to off-site disposal; and
  c) Use of proper personal protection equipment by site workers, as determined by the project proponent's occupational health and safety advisor.
- The site will be posted with proper warning signs in accordance with the LUC Operations Manual and the CCAFS Hazardous and Solid Waste Amendments (HSWA) Permit.

Statement of Basis:

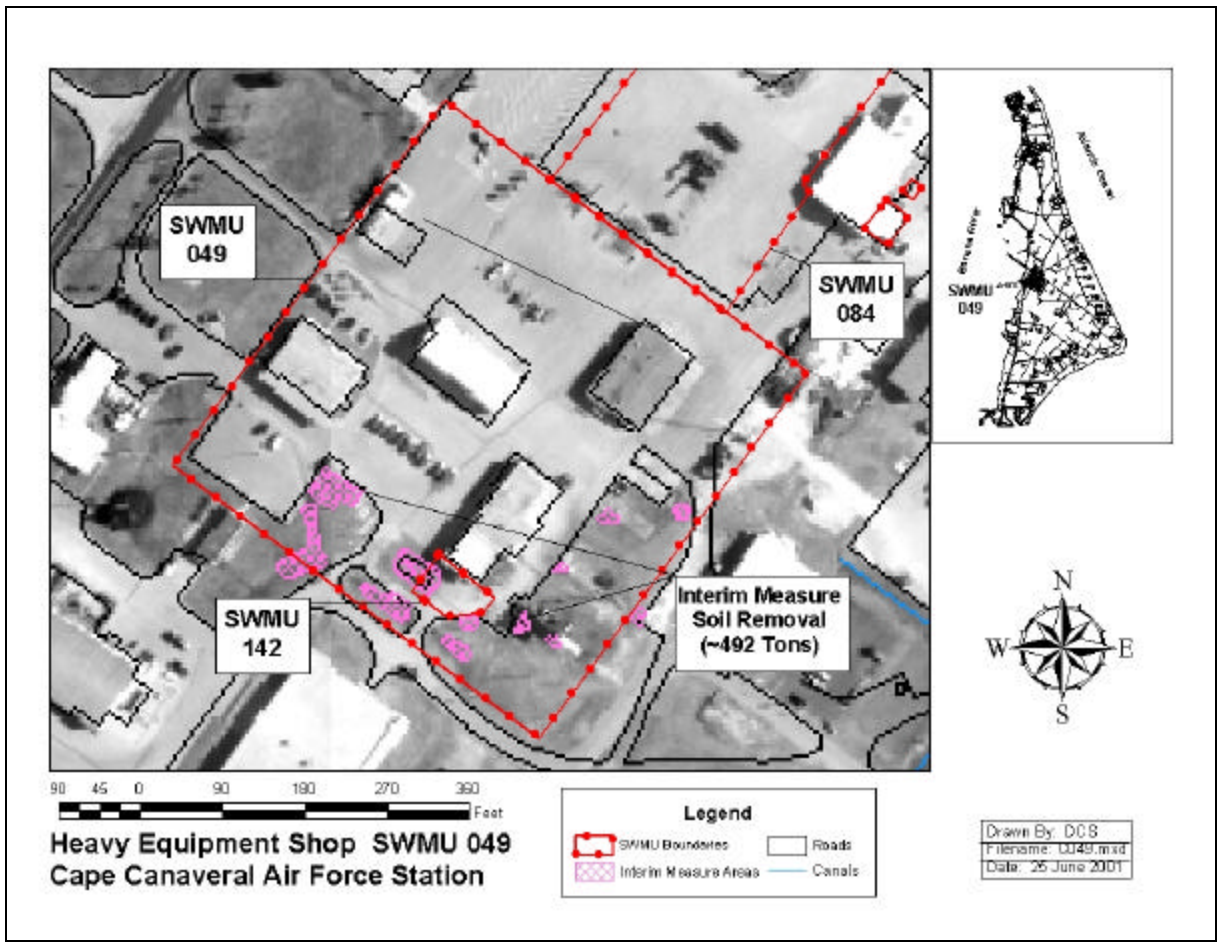
The Statement of Basis (SB) is currently being reviewed. It is anticipated that the SB will be accepted/incorporated into the HSWA Permit, scheduled for issuance early in 2002.

Additional Information:

Pertinent Document Reference:

RCRA Facility Investigation/Interim Measures Report, Facility 49835, SWMU No. 49, Parsons Engineering Science, Inc., March 1999.

Facility 49835 – Site Map



Please contact the 45 SW Installation Restoration Program Office to obtain additional information, including:
the 45 SW Land Use Controls Operation Plan; the CCAFS HSWA Permit; a complete record of corrective actions at the HES; or other related documents, guidance, and regulations. The IRP office can be reached by phone at (321) 853-0965. Information can also be obtained via the IRP website at http://www.mission-support.org/45SW_IRP_EA